FIG. 1 PRIOR ART

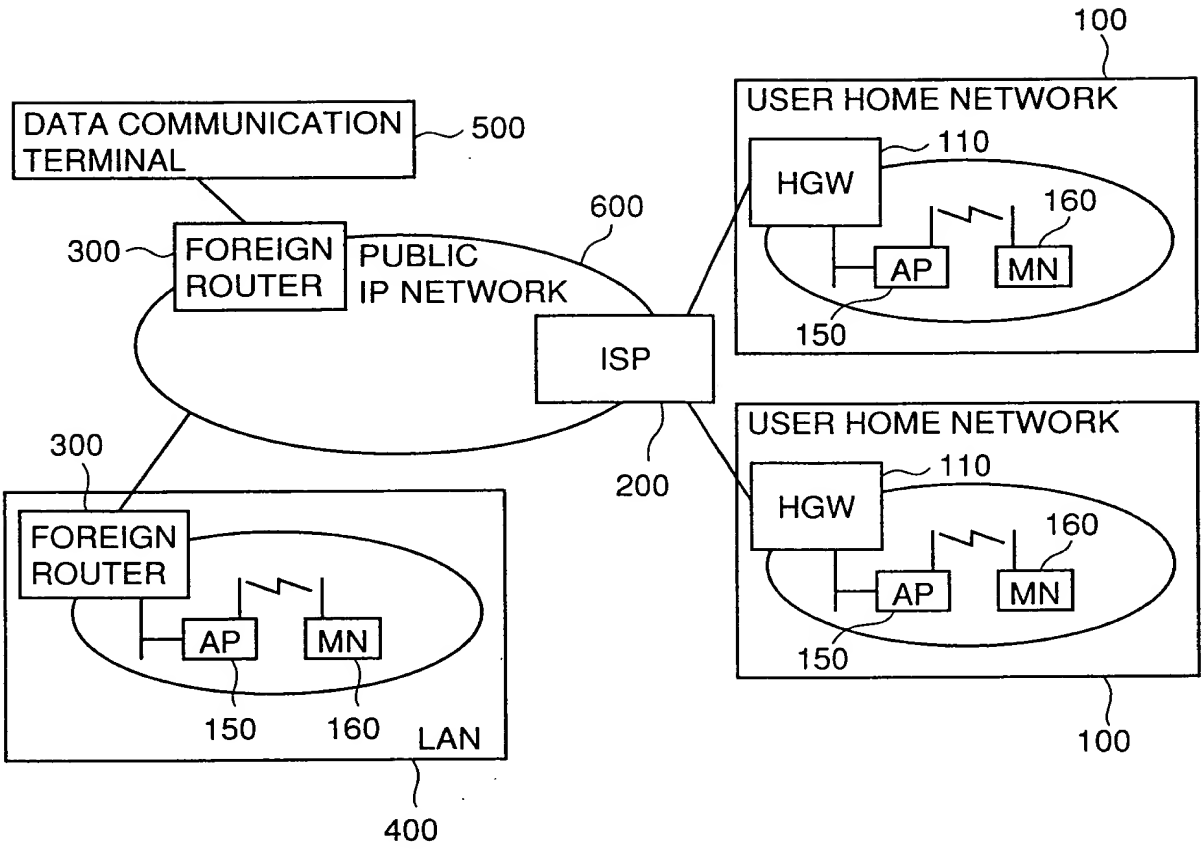


FIG. 2 PRIOR ART

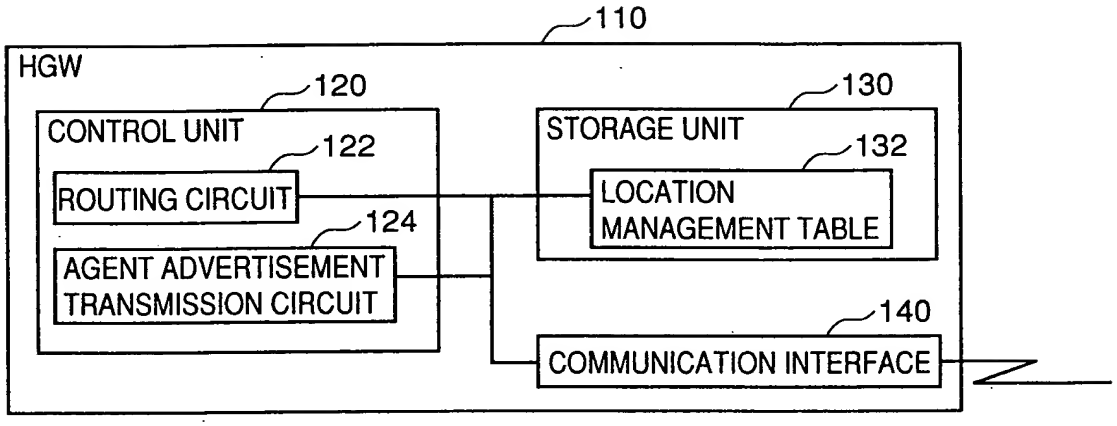


FIG. 3 PRIOR ART

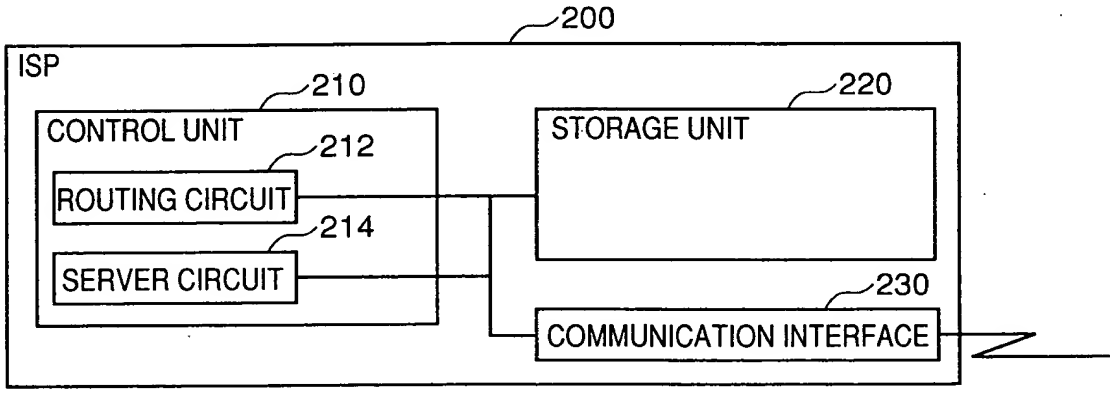


FIG. 4 PRIOR ART

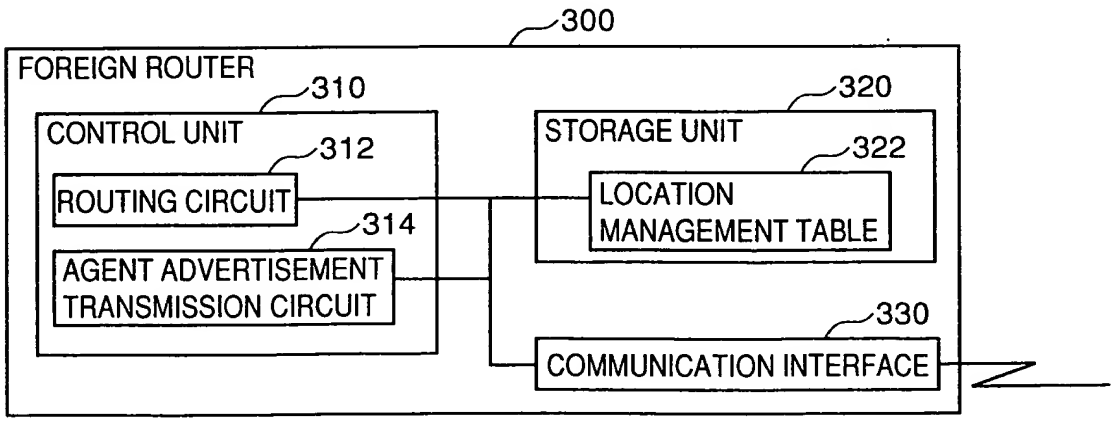


FIG. 5 PRIOR ART

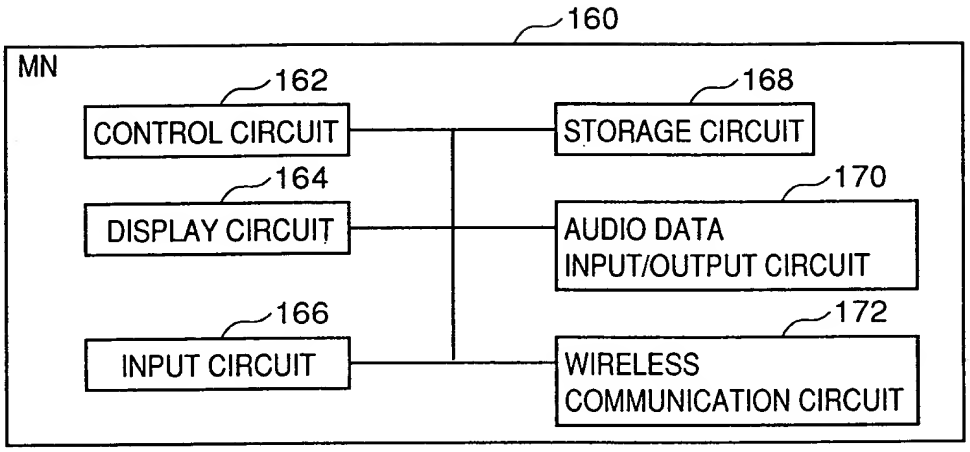


FIG. 6 PRIOR ART

HGW LOCATION MANAGEMENT TABLE	
HOME ADDRESS	CARE-OF ADDRESS
HOME ADDRESS	CARE-OF ADDRESS OF FOREIGN ROUTER
...	...
...	...
...	...

FIG. 7 PRIOR ART

MN LOCATION INFORMATION DATA		
IP ADDRESS	HOME AGENT ADDRESS	CURRENT ADDRESS
IP ADDRESS OF MN	ADDRESS OF HGW	ADDRESS OF HGW

FIG. 8 PRIOR ART

AGENT ADVERTISEMENT MESSAGE
(HGW / FOREIGN ROUTER → MN)

COMMUNICATION HEADER	ADDRESS OF HGW / FOREIGN ROUTER

FIG. 9 PRIOR ART

LOCATION REGISTRATION REQUEST MESSAGE (MN → HGW)

COMMUNICATION HEADER	ADDRESS OF HGW AS DESTINATION	IP ADDRESS OF MN AS SENDER	ADDRESS OF HGW / FOREIGN ROUTER RECEIVED BY MN

FIG. 10 PRIOR ART

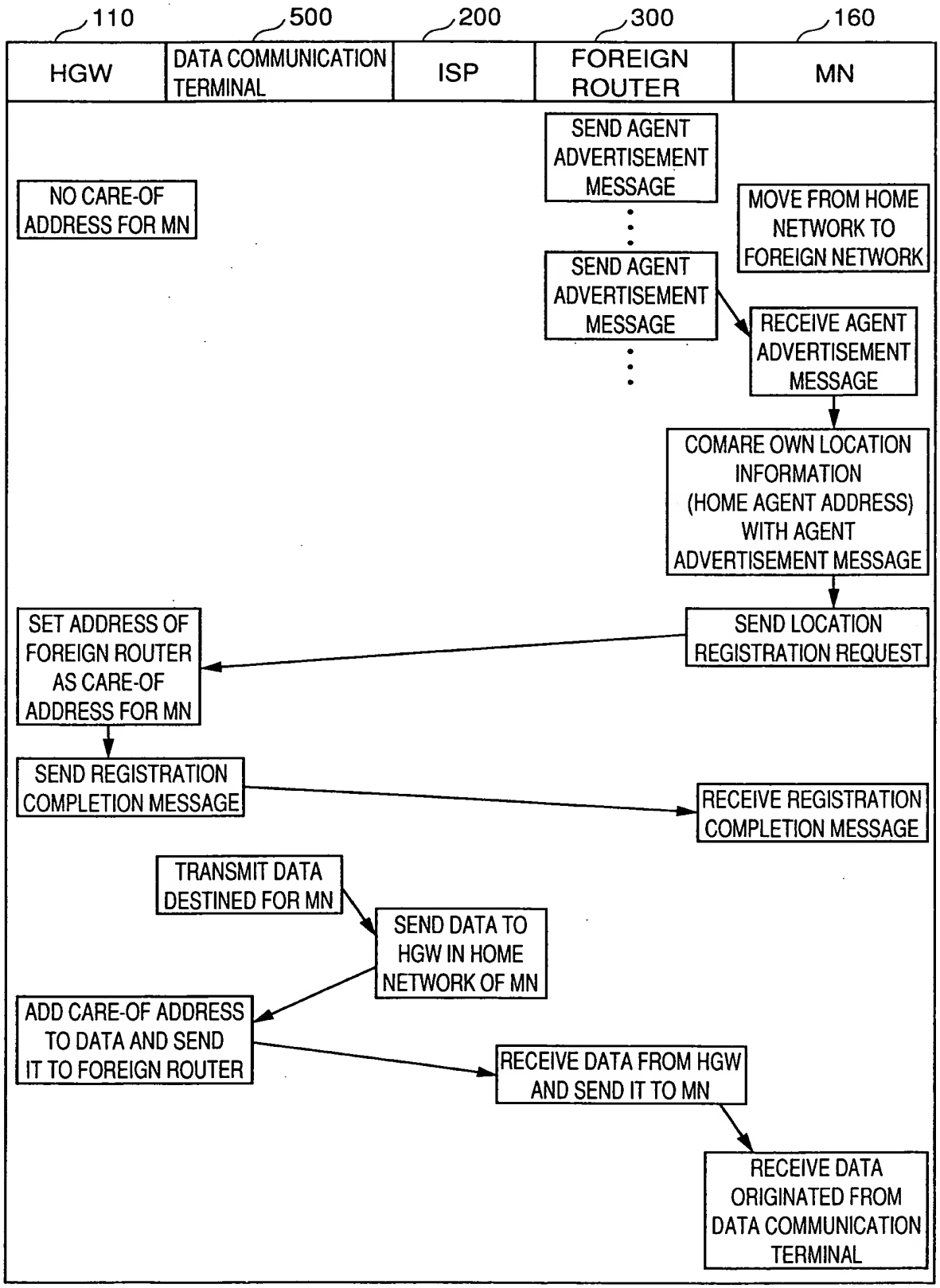


FIG. 11 PRIOR ART

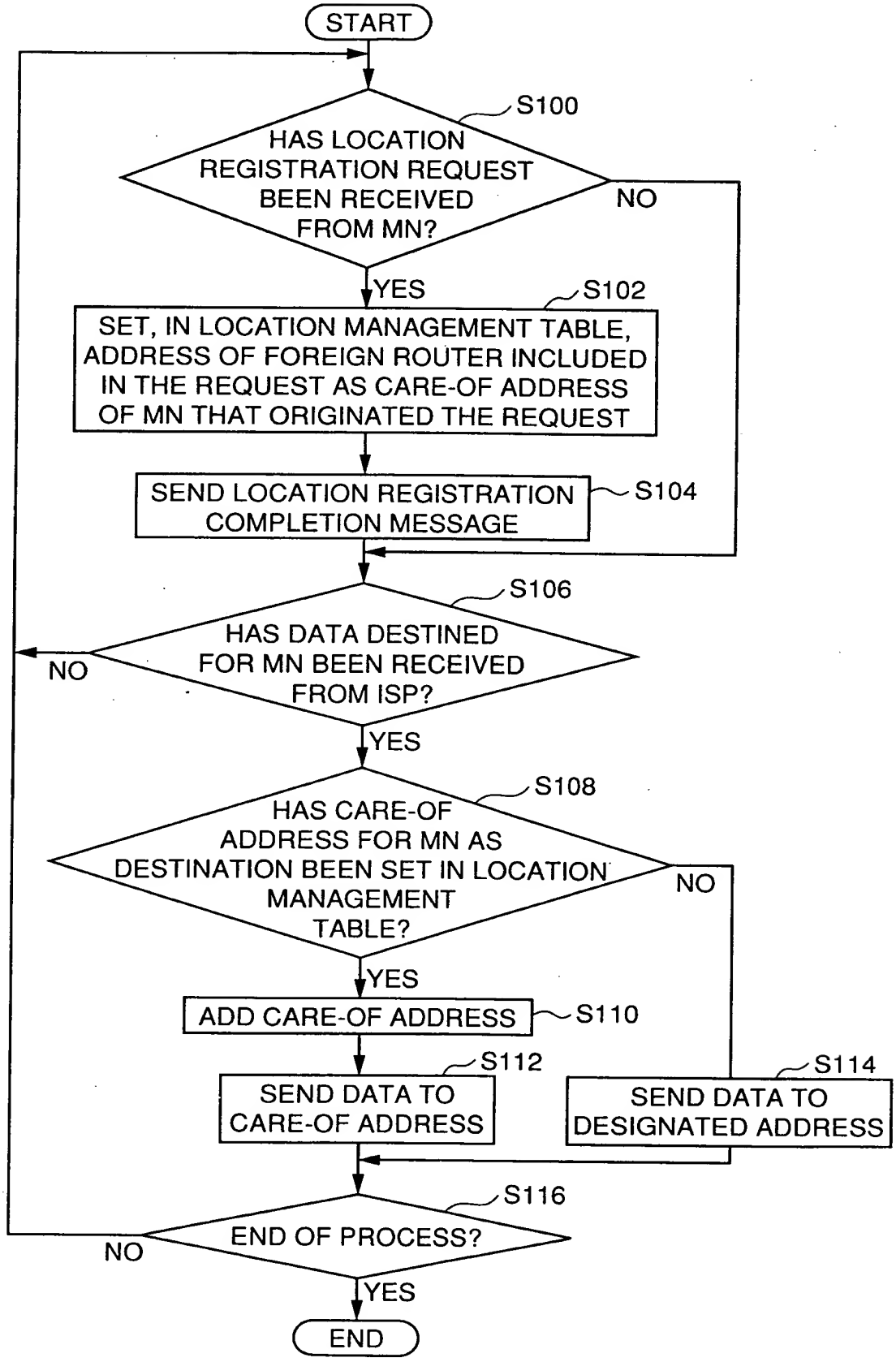


FIG. 12

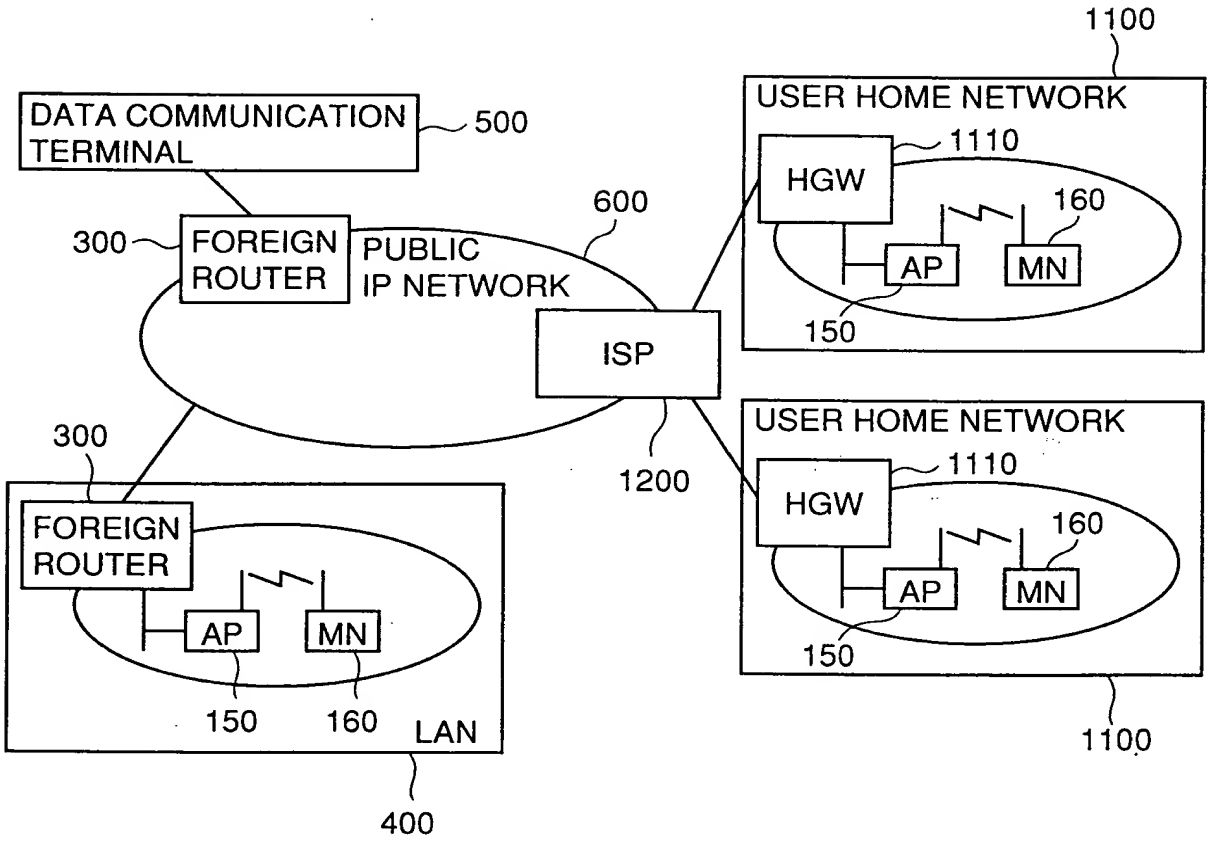

1100
USER HOME NETWORK
DATA COMMUNICATION TERMINAL
500
1110
HGW
600
160
300
FOREIGN ROUTER
PUBLIC IP NETWORK
AP
MN
150
ISP
300
USER HOME NETWORK
1110
HGW
1200
160
FOREIGN ROUTER
AP
MN
150
1100
150
160
LAN
400

FIG. 13

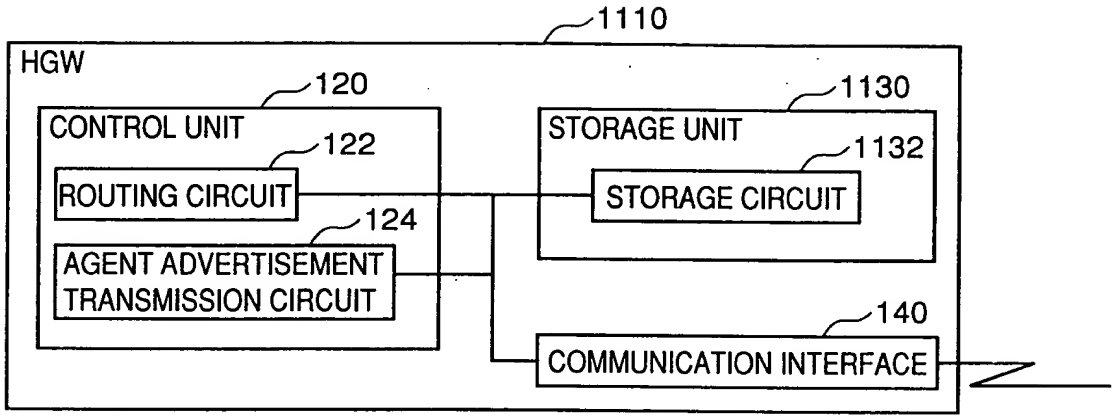

1110
HGW
120
CONTROL UNIT
122
ROUTING CIRCUIT
124
AGENT ADVERTISEMENT TRANSMISSION CIRCUIT
1130
STORAGE UNIT
1132
STORAGE CIRCUIT
140
COMMUNICATION INTERFACE

FIG. 14

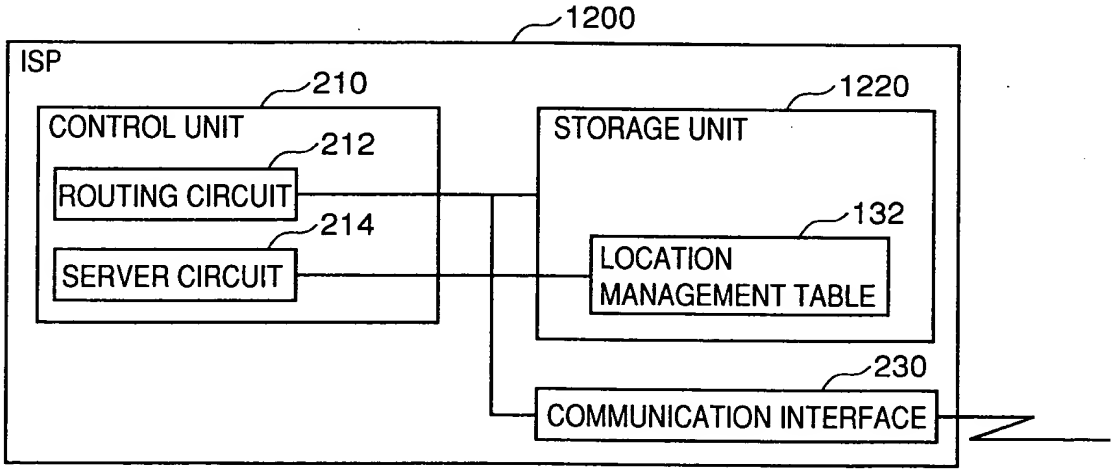

1200
ISP
210
CONTROL UNIT
212
ROUTING CIRCUIT
214
SERVER CIRCUIT
1220
STORAGE UNIT
132
LOCATION MANAGEMENT TABLE
230
COMMUNICATION INTERFACE

FIG. 15

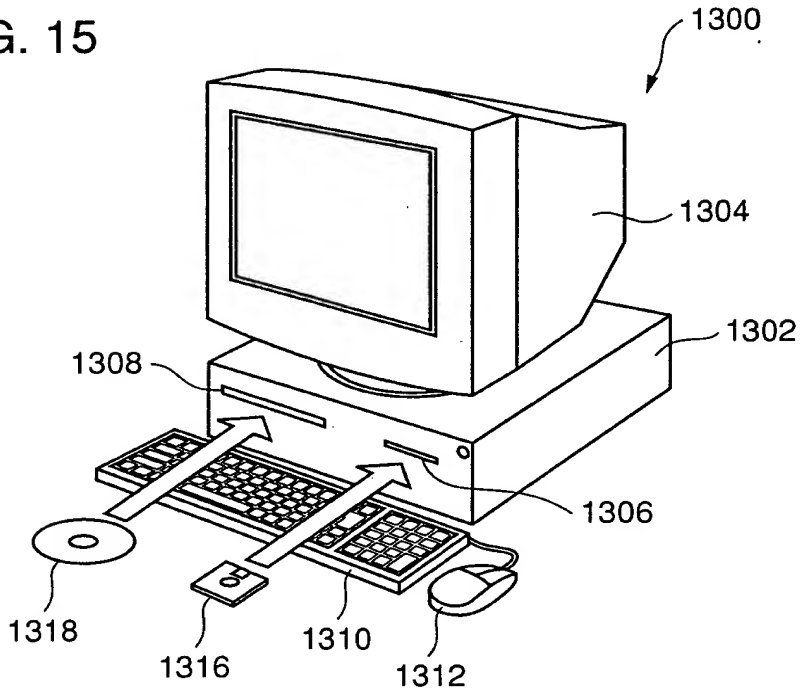

1300
1304
1302
1308
1306
1318
1316
1310
1312

FIG. 16

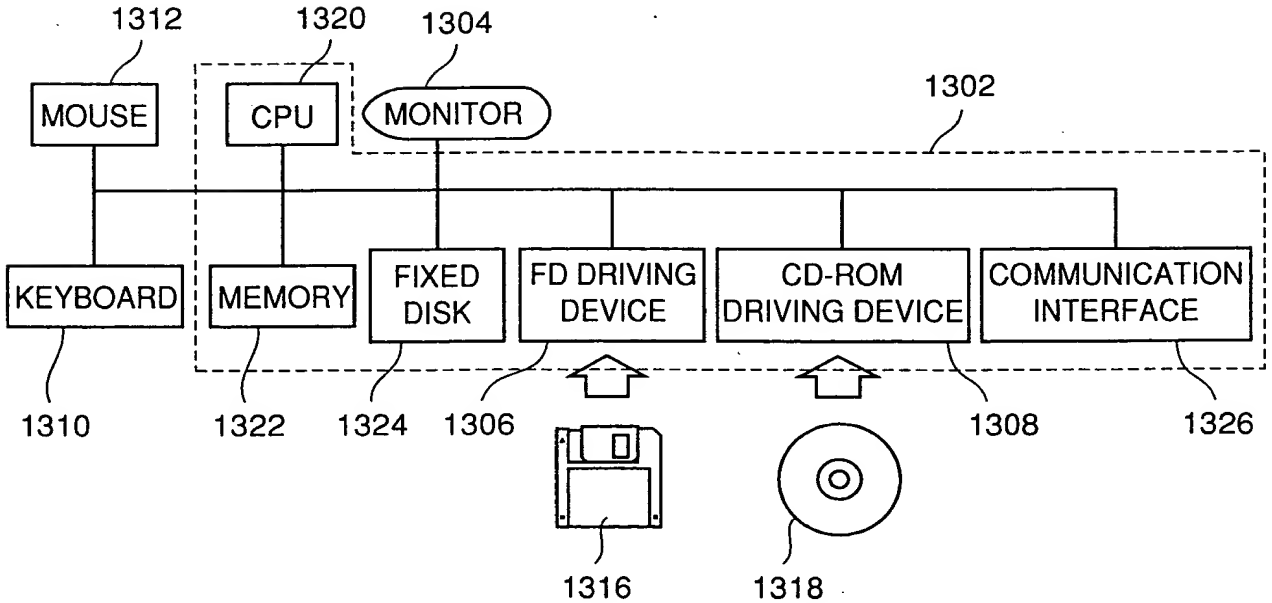

1312
1320
1304
1302
MOUSE
CPU
MONITOR
KEYBOARD
MEMORY
FIXED DISK
FD DRIVING DEVICE
CD-ROM DRIVING DEVICE
COMMUNICATION INTERFACE
1310
1322
1324
1306
1308
1326
1316
1318

FIG. 17

LOCATION REGISTRATION REQUEST MESSAGE (MN → ISP)

COMMUNICATION HEADER	ADDRESS OF ISP AS DESTINATION	IP ADDRESS OF MN AS SENDER	ADDRESS OF HGW / FOREIGN ROUTER RECEIVED BY MN

FIG. 18

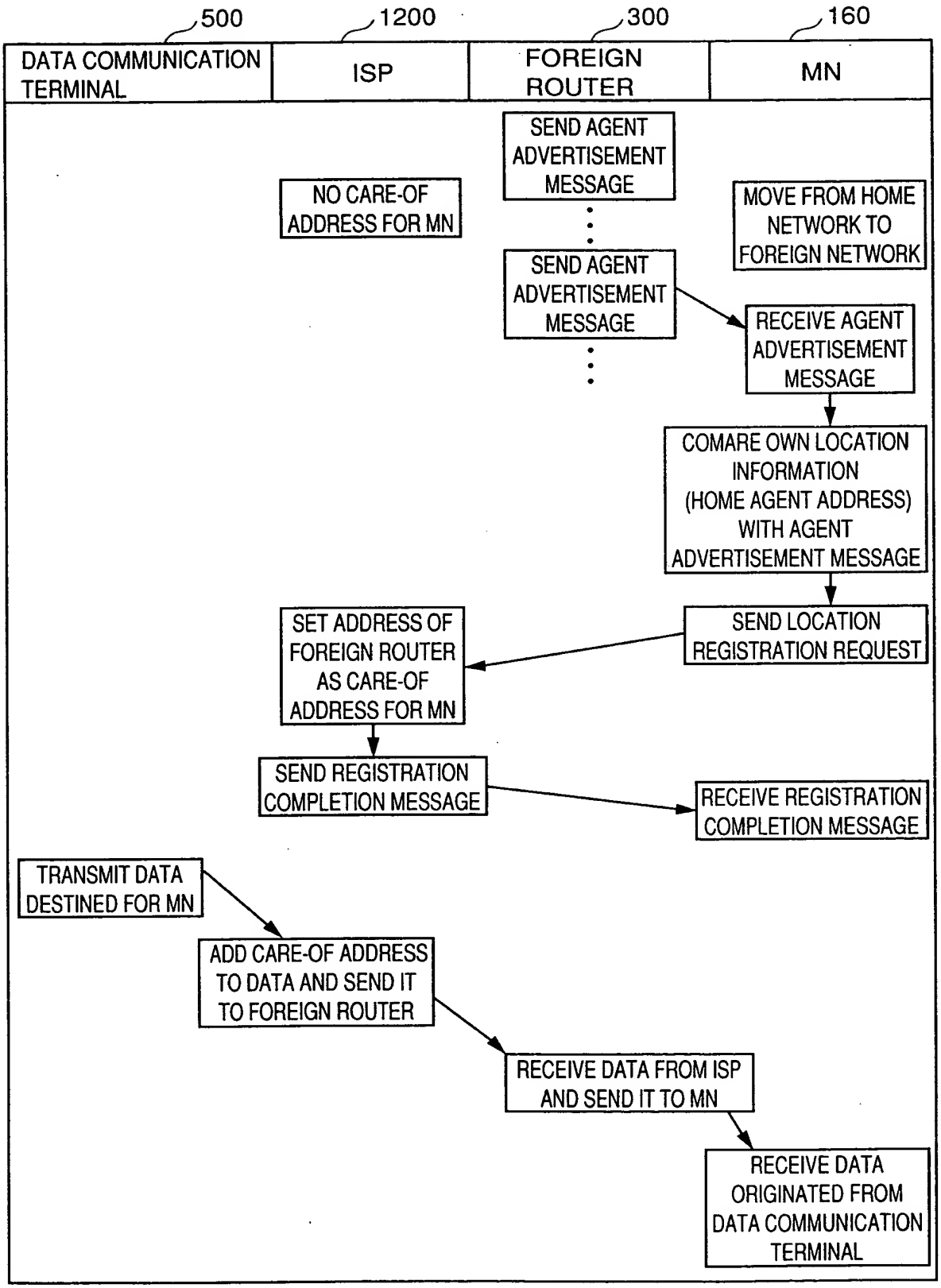

500
1200
300
160
DATA COMMUNICATION TERMINAL
ISP
FOREIGN ROUTER
MN
SEND AGENT ADVERTISEMENT MESSAGE
NO CARE-OF ADDRESS FOR MN
MOVE FROM HOME NETWORK TO FOREIGN NETWORK
SEND AGENT ADVERTISEMENT MESSAGE
RECEIVE AGENT ADVERTISEMENT MESSAGE
COMARE OWN LOCATION INFORMATION (HOME AGENT ADDRESS) WITH AGENT ADVERTISEMENT MESSAGE
SET ADDRESS OF FOREIGN ROUTER AS CARE-OF ADDRESS FOR MN
SEND LOCATION REGISTRATION REQUEST
SEND REGISTRATION COMPLETION MESSAGE
RECEIVE REGISTRATION COMPLETION MESSAGE
TRANSMIT DATA DESTINED FOR MN
ADD CARE-OF ADDRESS TO DATA AND SEND IT TO FOREIGN ROUTER
RECEIVE DATA FROM ISP AND SEND IT TO MN
RECEIVE DATA ORIGINATED FROM DATA COMMUNICATION TERMINAL

FIG. 19

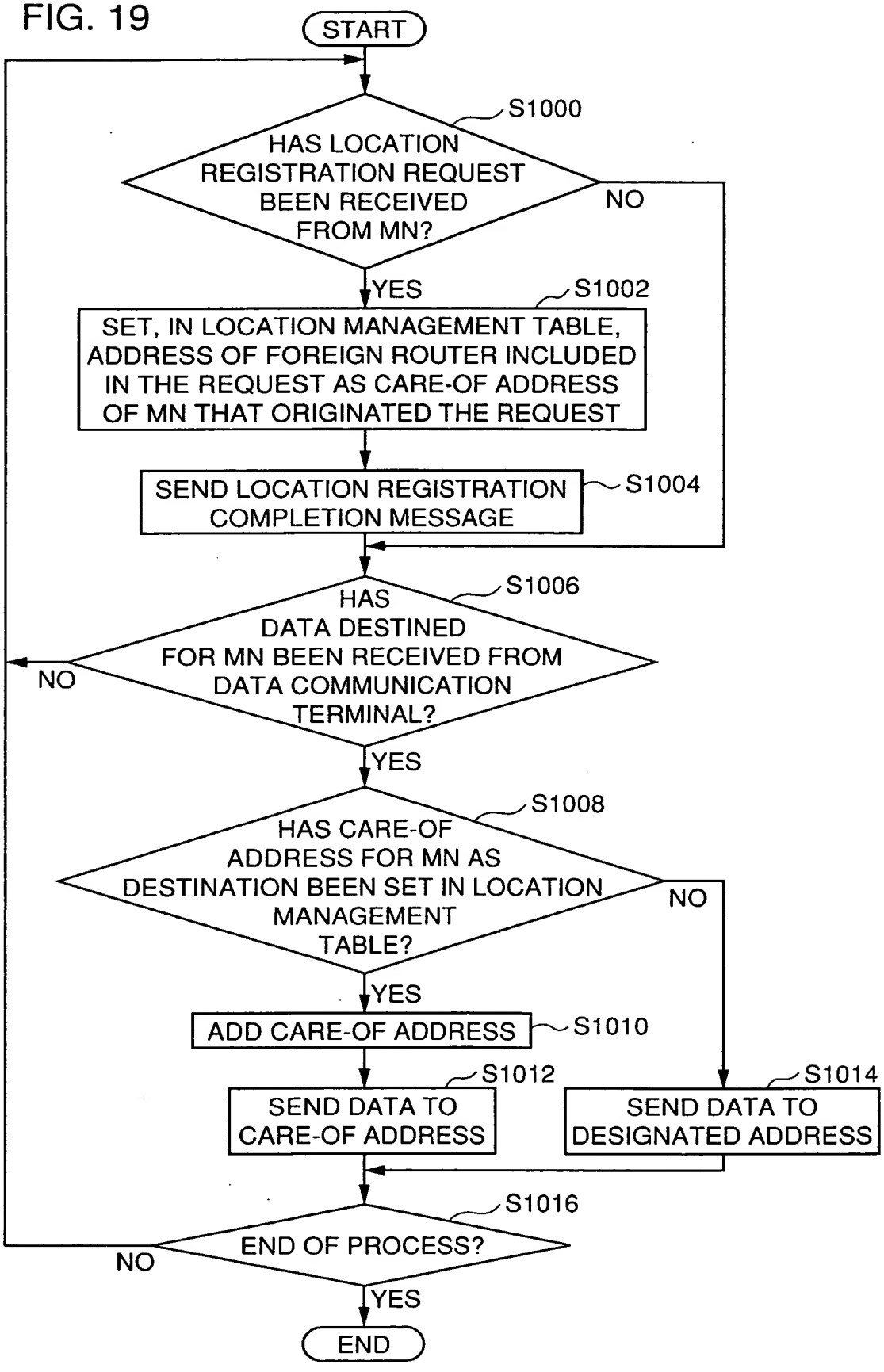

START
S1000
HAS LOCATION REGISTRATION REQUEST BEEN RECEIVED FROM MN?
NO
YES
S1002
SET, IN LOCATION MANAGEMENT TABLE, ADDRESS OF FOREIGN ROUTER INCLUDED IN THE REQUEST AS CARE-OF ADDRESS OF MN THAT ORIGINATED THE REQUEST
SEND LOCATION REGISTRATION COMPLETION MESSAGE
S1004
S1006
HAS DATA DESTINED FOR MN BEEN RECEIVED FROM DATA COMMUNICATION TERMINAL?
NO
YES
S1008
HAS CARE-OF ADDRESS FOR MN AS DESTINATION BEEN SET IN LOCATION MANAGEMENT TABLE?
NO
YES
ADD CARE-OF ADDRESS
S1010
S1012
SEND DATA TO CARE-OF ADDRESS
S1014
SEND DATA TO DESIGNATED ADDRESS
S1016
END OF PROCESS?
NO
YES
END

FIG. 20

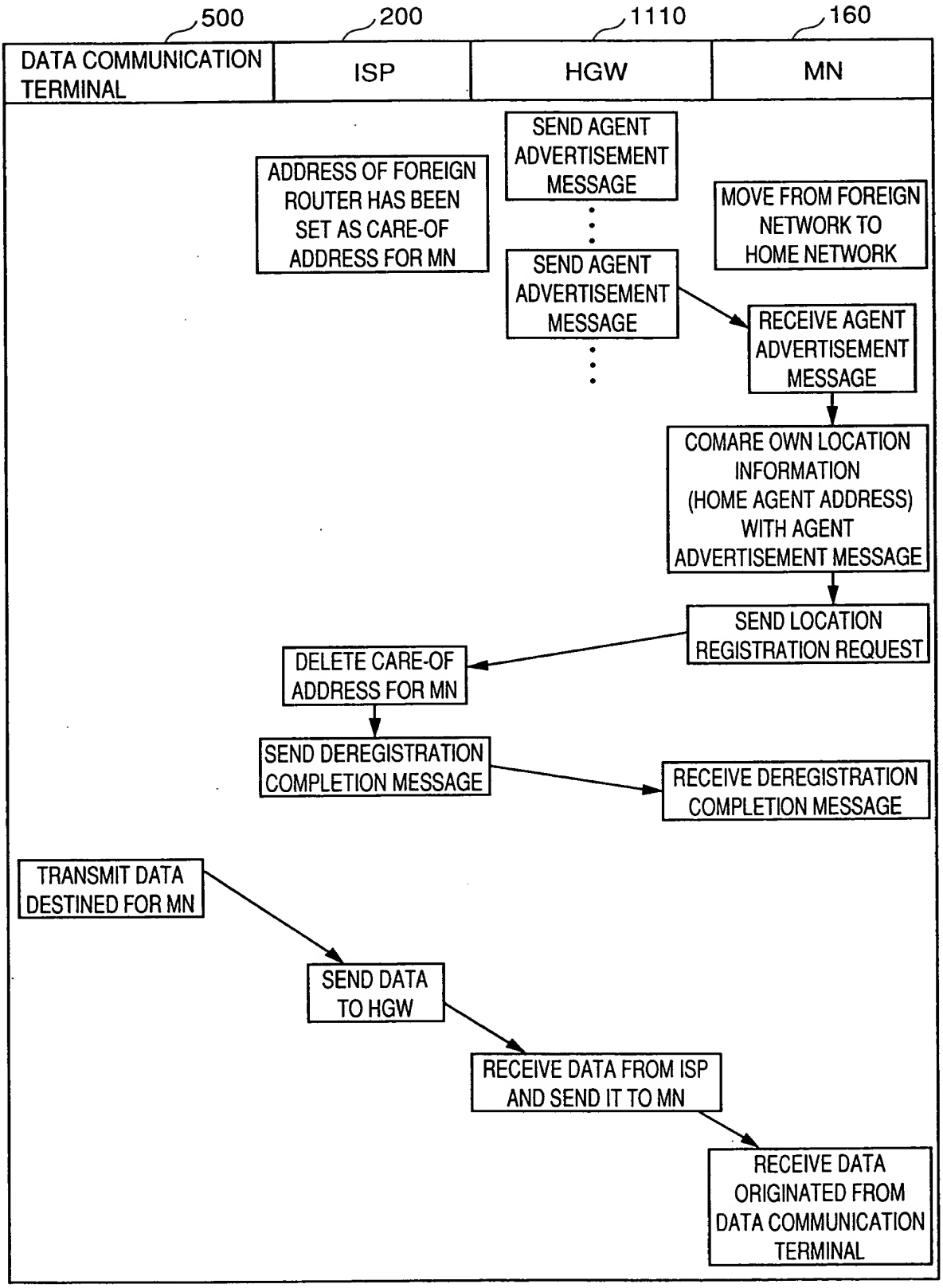
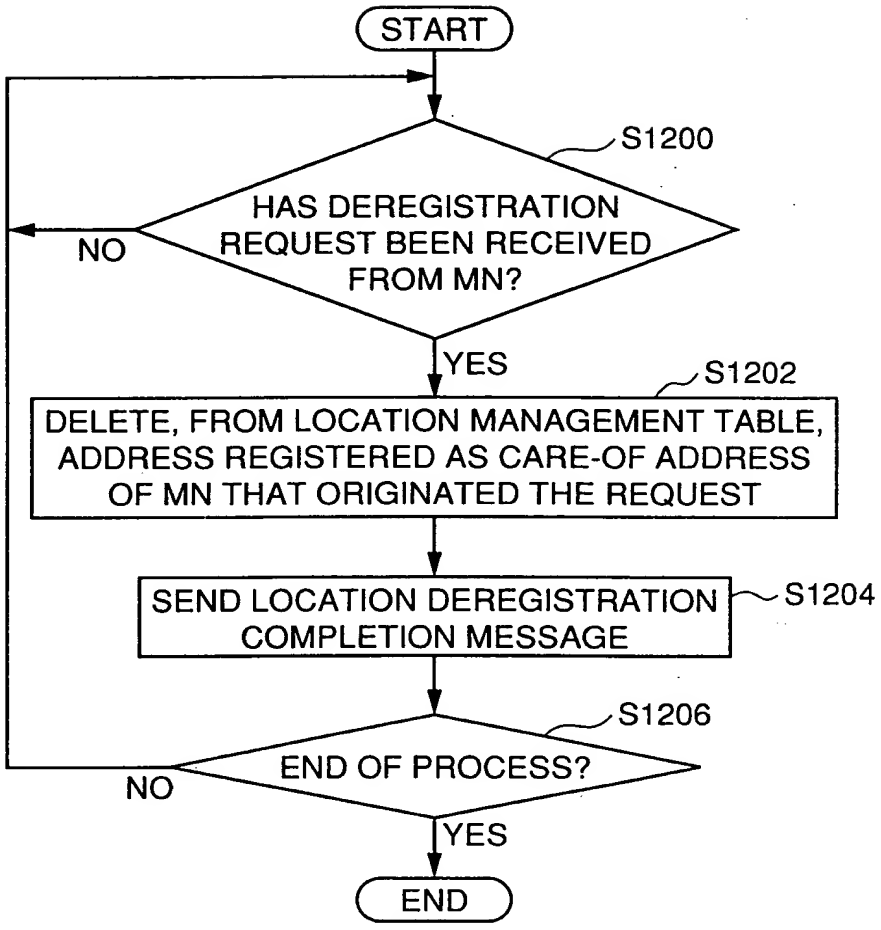

500
200
1110
160
DATA COMMUNICATION TERMINAL
ISP
HGW
MN
SEND AGENT ADVERTISEMENT MESSAGE
ADDRESS OF FOREIGN ROUTER HAS BEEN SET AS CARE-OF ADDRESS FOR MN
MOVE FROM FOREIGN NETWORK TO HOME NETWORK
SEND AGENT ADVERTISEMENT MESSAGE
RECEIVE AGENT ADVERTISEMENT MESSAGE
COMARE OWN LOCATION INFORMATION (HOME AGENT ADDRESS) WITH AGENT ADVERTISEMENT MESSAGE
SEND LOCATION REGISTRATION REQUEST
DELETE CARE-OF ADDRESS FOR MN
SEND DEREGISTRATION COMPLETION MESSAGE
RECEIVE DEREGISTRATION COMPLETION MESSAGE
TRANSMIT DATA DESTINED FOR MN
SEND DATA TO HGW
RECEIVE DATA FROM ISP AND SEND IT TO MN
RECEIVE DATA ORIGINATED FROM DATA COMMUNICATION TERMINAL

FIG. 21


START
S1200
HAS DEREGISTRATION REQUEST BEEN RECEIVED FROM MN?
NO
YES
S1202
DELETE, FROM LOCATION MANAGEMENT TABLE, ADDRESS REGISTERED AS CARE-OF ADDRESS OF MN THAT ORIGINATED THE REQUEST
SEND LOCATION DEREGISTRATION COMPLETION MESSAGE
S1204
S1206
END OF PROCESS?
NO
YES
END